

# Effect of treatment on quality of life in Egyptian vitiligo patients using the Arabic version of Dermatology Life Quality Index

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## Background

Vitiligo is a disease that can develop at any time throughout life with an unpredictable course. It is clinically presented as depigmented macules or patches that occur due to malfunction and loss of melanocyte.

## Objective

To evaluate the impact of severity of vitiligo evaluated by Vitiligo Area Scoring Index (VASI) score on quality of life of Egyptian patients using the Arabic translation of the Dermatology Life Quality Index (DLQI) and to evaluate the treatment effect on quality of life of Egyptian vitiligo patients.

## Patients and methods

In all, 25 vitiligo patients with more than or equal to 18 years old were enrolled into the study. Corticosteroid cream was topically applied and was combined with Ultraviolet B-Narrow band (UVB-NB) phototherapy. The session of UVB-NB was done 2 days a week for at least 4 months duration. The VASI score was used before and after treatment to estimate the severity of vitiligo. The effect of vitiligo on patients' quality of life was evaluated before and after treatment using the Arabic version of the DLQI scale.

## Results

Vitiligo negatively affected the Egyptian patients' quality of life. The mean of the VASI score was significantly decreased after treatment ( $P = 0.040$ ). Moreover, the mean of the DLQI scale after treatment ( $6.48 \pm 2.89$ ) was significantly decreased than that before treatment ( $7.44 \pm 3.11$ ) ( $P = 0.003$ ). There was significant positive correlation between VASI score and DLQI of patients before treatment ( $r = 0.736$ ;  $P = 0.000$ ) and after treatment ( $r = 0.667$ ;  $P = 0.000$ ).

## Conclusion

The effect of vitiligo on patients' quality of life was correlated positively with the severity of the disease. Vitiligo patients before treatment have worse quality of life than after treatment. The improvement of vitiligo with treatment results in better quality of life.

## Keywords:

Dermatology Life Quality Index, quality of life, vitiligo

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## Introduction

Vitiligo is a disease acquired anytime throughout the life with an unpredictable course. It is caused due to the dysfunction and loss of cutaneous pigment cells with skin depigmentation being the characteristic feature. It is considered as one of the most depigmenting skin disorders, affecting about 0.5–2% of the population, and it can develop among people of all races and it can affect both sexes [1].

Vitiligo is mostly a clinically diagnosed disease with no need for further tools for diagnosis. There are four main types of vitiligo, which are generalized, segmental, nonsegmental, and unclassifiable vitiligo [2].

The most common of which is generalized vitiligo, which affects mainly the face, hands, and the feet [3].

The disease onset and course may differ according to the type of vitiligo. Despite vitiligo is considered not to threaten the patients' life, it has deleterious effects on the patient's social, occupational, and overall life activities, and the resulting deep cosmetic disfigurement has a serious negative outcome on patient's quality of life [4].

Vitiligo, particularly that affects the exposed areas, can cause significant disfigurement. Considerable proportions of affected patients are socially isolated because of the sense of shame and low self-confidence attributed to their vitiligo [5].

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Quality of life index is a tool designed to reflect affection of different life aspects (e.g. social, behavioral, and cultural). It was in 1994, when the first dermatology-specific quality of life namely Dermatology Life Quality Index (DLQI) was published [6], and then it was translated into Arabic language.

There are several treatment options for vitiligo (surgical and nonsurgical) but none are universally effective. These include topical and systemic corticosteroids, topical calcineurin inhibitors, and phototherapy (sunlight, UVA, UVB-NB, excimer laser) [7,8].

This study assessed the impact of severity of vitiligo evaluated by the Vitiligo Area Scoring Index (VASI) score on Egyptian patients' quality of life using the Arabic translation of the DLQI and evaluated the influence of treatment on vitiligo patients' quality of life.

### Patients and methods

Twenty-five Egyptian vitiligo patients of age 18 years old or above were recruited from outpatient clinics of dermatology, Assiut University Hospital, Assiut, Egypt, and were included in the study. Female patients who were pregnant and patients who were uncooperative were excluded from the study.

This study was approved by the Institutional Ethics and Research Committee of the Faculty of Medicine, Assiut University, Assiut, Egypt (IRB no: 17100047) and was carried out in accordance with the guidelines of the Helsinki Declaration. All patients gave informed consent before participation in the study.

The patients were treated with topically applied corticosteroids and UVB-NB. The session of UVB-NB was done 2 days a week for at least 4 months duration.

A complete history regarding age, sex, residence, occupation, residence, marital status, age of onset, disease duration, course, preceding lines of treatment, and history of illness in the family was taken from all patients. A complete skin checkup was accomplished. VASI score was calculated before and after treatment.

The Arabic version of the DLQI [9] was distributed to all patients before and after treatment to estimate the quality of life. Every question was scored as the next reading: not related (scored 0), at all (scored 0), a little (scored 1), much (scored 2), and too much (scored 3).

The scoring of DLQI was measured by adding the values obtained from every question, since 30 was the

highest value and 0 was the lowest one. The lower the score the better the patients' quality of life.

### Explanation of Dermatology Life Quality Index score

A total score of 0–1 means that the patient quality of life was not affected; 2–5 for mild impact on the patient quality of life; 6–10 for affection of the patient quality of life moderately; 11–20 means that the dermatological disease (vitiligo) has a very large effect on the quality of life; and finally 21–30 the disease effect on the patient quality of life was extremely large.

### Statistical analysis

Data entry and data analysis were done using SPSS (version 22) (Statistical Package for the Social Sciences) (SPSS Inc., Chicago, Illinois, USA). Data were presented as number, percentage, mean and SD, and interquartile range.  $\chi^2$  test was used to compare between qualitative variables. Wilcoxon signed-rank test was done to compare quantitative variables between, before, and after treatment. Spearman's correlation was done to measure correlation between quantitative variables in case of nonparametric data. A *P* value less than or equal to 0.05 was considered statistically significant.

### Results

Our study included 25 vitiligo patients,  $25.80 \pm 5.66$  years was the mean  $\pm$  SD age of the patients with age range 18–36 years. Six (24%) patients were males and 19 (76%) patients were females. The patients skin phototype were type III (eight patients, 32%), type IV (nine patients, 36%), and type V (eight patients, 32%). The mean  $\pm$  SD of the disease duration was  $8.42 \pm 5.26$  (range, 2–8 years).

Table 1 shows that there was statistically significant difference in the DLQI before and after treatment. Its mean  $\pm$  SD was  $7.44 \pm 3.11$  before treatment and decreased to  $6.48 \pm 2.89$  after treatment (*P* = 0.003).

Moreover, there were five (20%) patients who had mild impact of vitiligo on quality of life before treatment; this number increased to eight (32%) patients after treatment. However, patients who had a very large effect

**Table 1 Mean of the Dermatology Life Quality Index scale before and after treatment**

DLQI scale	Before treatment (n=25)	After treatment (n=25)	<i>P</i>
Mean $\pm$ SD	7.44 $\pm$ 3.11	6.48 $\pm$ 2.89	0.003*
Median (IQR)	8.0 (6.0-9.0)	6.0 (5.0-8.0)	

DLQI, Dermatology Life Quality Index; IQR, interquartile range.  
\*Significant *P* value less than or equal to 0.05.

of vitiligo on their quality of life before treatment were six (24%), and this number decreased to three (12%) patients after treatment (Table 2).

In our results, the mean of the VASI score was significantly decreased after treatment ( $P = 0.040$ ) (Table 3).

There was significant positive correlation between VASI score and DLQI of the patients before treatment ( $r = 0.736$ ;  $P = 0.000$ ) (Fig. 1) and after treatment ( $r = 0.667$ ;  $P = 0.000$ ) (Fig. 2).

**Discussion**

Vitiligo is a result of selective destruction of epidermal melanocytes leading to the formation of well-defined depigmented patches [10].

Vitiligo is considered a cosmetic problem; it has major consequences on patient’s life due to affection on a

person’s emotional and psychological health. A person’s interpersonal and social behavior may be affected due to the sense of being stigmatized, which sequentially aggravated the occurrence of depression [11].

In our results, the mean  $\pm$  SD of the DLQI was  $7.44 \pm 3.11$  before treatment and decreased to  $6.48 \pm 2.89$  after treatment ( $P = 0.003$ ), and this decrease was statistically significant.

Chahar *et al.* [12] observed that the DLQI mean  $\pm$  SD of vitiligo patients was  $8.64 \pm 4.32$  before treatment. After treatment, it was significantly reduced to ( $5.86 \pm 2.15$ ) ( $P < 0.01$ ), these results were consistent with the results we obtained.

The results of a preceding study [5] were higher than our results in vitiligo patients, since the total DLQI scores had significantly increased ( $P < 0.001$ ) compared with healthy controls.

In our results, there was significant positive correlation between the VASI score and the DLQI before and after treatment. We noticed improvement of the quality of life and a decrease in the DLQI score with decreasing of the VASI score after treatment.

Our results were similar to the results observed by Hedayat *et al.* [13]; there was a significant positive correlation between VASI score and quality of life, in a way that higher VASI scores were associated with poorer quality of life ( $r = 0.187$ ;  $P = 0.015$ ).

Also, the results of a previous study [14] were in agreement with our results, which reported that the VASI score was positively correlated with DLQI score ( $P < 0.001$ ). They found that 18.2% of the vitiligo patients had no effect on the DLQI; little effect was reported in 35% of the patients; moderate effect was seen in 32.5% of patients; and extremely high effect was seen in 3% of them.

**Table 2 Comparison between Dermatology Life Quality Index scale before and after treatment**

DLQI scale	Before treatment (n=25) [n (%)]	After treatment (n=25) [n (%)]	P
Small effect	5 (20.0)	8 (32.0)	0.429
Moderate effect	14 (56.0)	14 (56.0)	
Very large effect	6 (24.0)	3 (12.0)	

DLQI, Dermatology Life Quality Index.

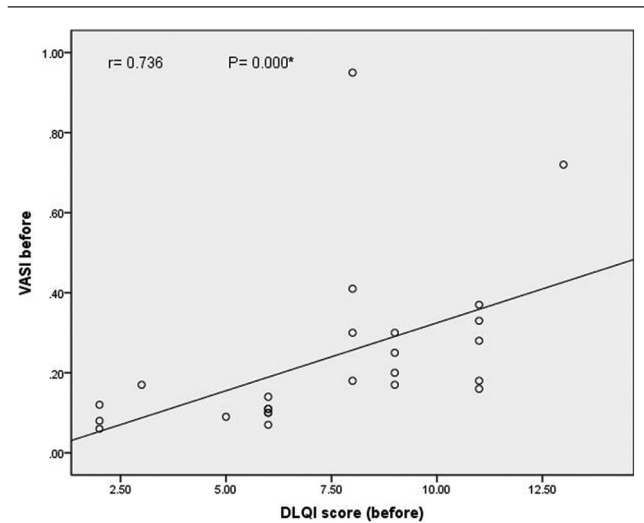
**Table 3 Comparison of the Vitiligo Area Scoring Index score before and after treatment**

VASI	Before treatment	After treatment	P
Mean $\pm$ SD	0.24 $\pm$ 0.21	0.18 $\pm$ 0.17	0.040*
Median (IQR)	0.17 (0.11-0.30)	0.13 (0.08-0.22)	

IQR, interquartile range; VASI, Vitiligo Area Scoring Index.

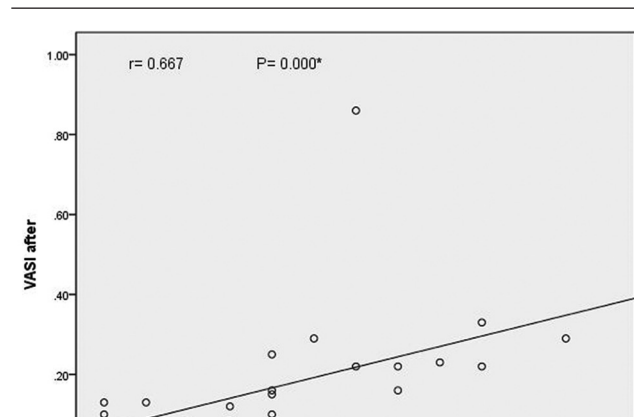
\*Significant P value less than or equal to 0.05.

**Figure 1**



Correlation between VASI score and DLQI before treatment. DLQI, Dermatology Life Quality Index; VASI, Vitiligo Area Scoring Index.

**Figure 2**



Correlation between VASI score and DLQI after treatment. DLQI, Dermatology Life Quality Index; VASI, Vitiligo Area Scoring Index.

## Conclusion

Vitiligo has strong and noticeable deleterious effects (emotionally and psychologically) and leads to adverse impact on Egyptian patients' quality of life. The effect of vitiligo on patients' quality of life was correlated positively with the severity of disease. The patients before treatment have worse quality of life than after treatment. Improvement of vitiligo with treatment results in better quality of life. Therefore, for better management and treatment outcomes, it would be useful to take into consideration the influence of vitiligo on the quality of life.

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## Conflicts of interest

None declared.

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